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ARCHEOLOGICAL ASSESSMENTS REPORT No. 83

Intensive Cultural Resources Survey  
Ditch 61 Extension  
Poinsett County, Arkansas  
A Negative Finding

by

W. J. Bennett, Jr.

Work Sponsored  
by

The U.S. Army Corps of Engineers, Memphis District

Contract No.  
DACW66-88-M-0716

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# ABSTRACT

A cultural resources survey was undertaken in support of planned project development by the U.S. Army Corps of Engineers, Memphis District, at Ditch 61, Poinsett County, Arkansas. The project area consisted of two narrow corridors comprising approximately 81 acres. The area is situated within the St. Francis Sunk Lands. Project activities included a records check, background study, and field investigations. No cultural resources were located within the project area. No further archeological investigations are recommended for the project area.

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Intensive Cultural Resources Survey  
Ditch 61 Extension  
Poinsett County, Arkansas  
A Negative Finding

INTRODUCTION

Project Authorization

The U.S. Army Corps of Engineers, Memphis District, has proposed the construction of an extension of Ditch 61 near the Marked Tree Siphon, Poinsett County, Arkansas. As part of the fulfillment of its responsibility for the proper management of cultural resources under the National Historic Preservation Act of 1980 (Public Law 96-515) and other authorities, the U.S. Army Corps of Engineers, Memphis District, determined that it was necessary to conduct an intensive pedestrian survey of the project area to locate and assess the cultural resources that might be impacted by this action. This work was performed by Archeological Assessments, Inc., Nashville, Arkansas, under Contract No. DACW66-88-M-0716.

Project Area Location and Description (Figures 1 and 2)

The project area is located in Poinsett County, Arkansas, northwest of the town of Marked Tree.

The project area consists of two linear corridors. The east-west line, approximately 5,100 feet in length, extends from station 6+00 to station 57+00 (part of the B & N Railroad trestle). Here the area examined consisted of a corridor 400 feet landward from the left top bank and 200 feet landward from the right top bank. From station 6+00 to station 17+50 on the left bank, the area of concern extends to the top of the existing levee.

A second corridor runs roughly north/south for approximately 1.75 miles from the sharp bend in the levee (station 34+94 P.C.) to the B & N Railroad levee crossing. Here the area of concern consists of an approximately 50-foot-wide corridor extending from the levee toe (on the west side) to the existing borrow pits.

The area examined consists of approximately 81 acres.

Project Goals and Orientation

The aim of this effort was to record the cultural resources that existed in the area, to formulate an estimate of their possible significance, and to estimate possible project impacts to these resources. Thus, the effort was essentially an inventory.

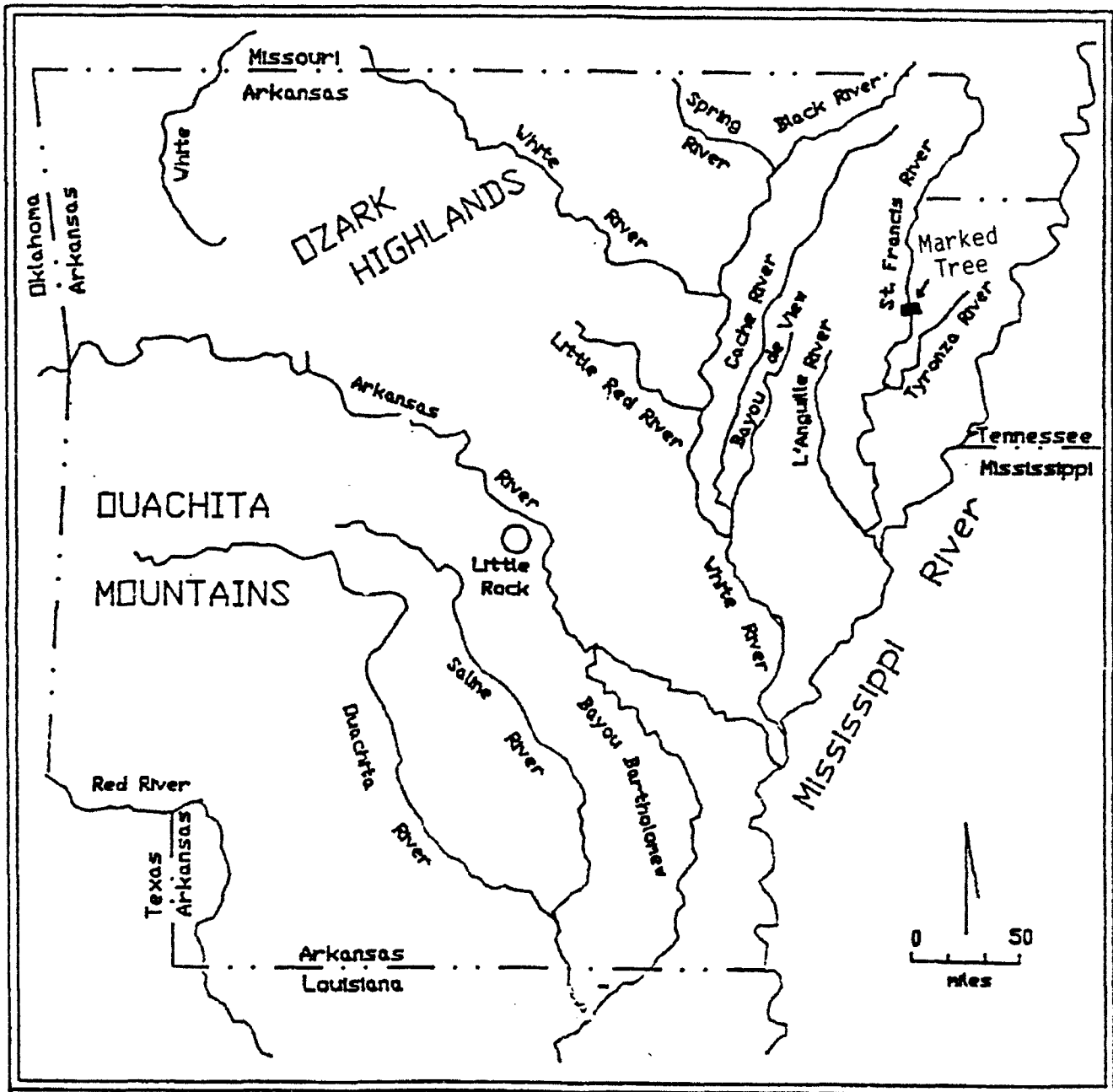


Figure 1. Project vicinity map.

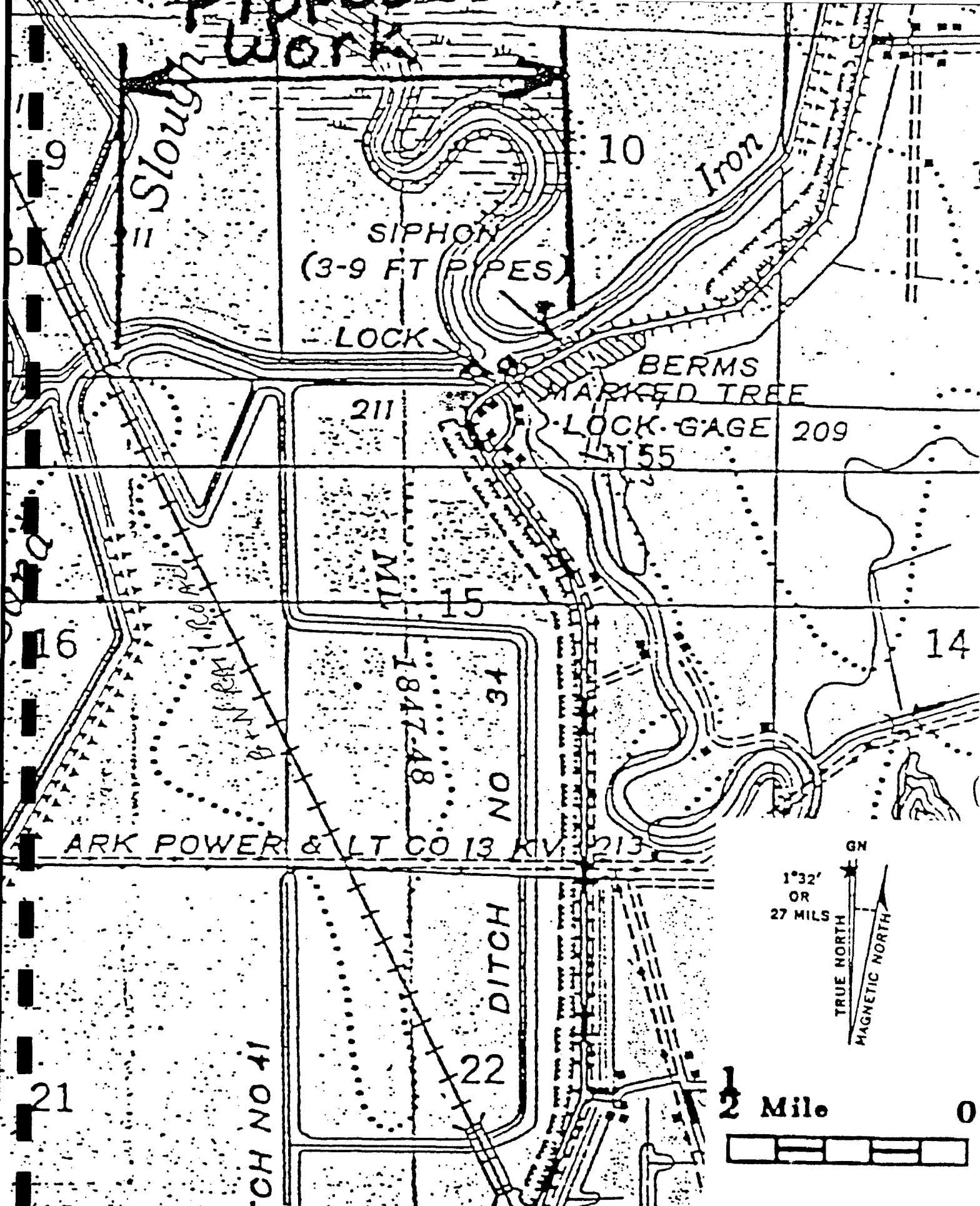


Figure 2. Project area location.

### Environmental Context

The project area is located in the St. Francis Sunk Lands of the eastern lowlands of the Mississippi River Alluvial Valley (Saucier 1970, 1974; Morse and Morse 1983: 15), just west of the St. Francis River. The area is composed of depressed slack-water flats and the natural drainageways are sluggish bayous and sloughs (Gray and Ferguson 1977: 6). Primarily from January to June, this area is flooded for periods of a few days to several months. Soils in the area were mapped as Sharkey soils, frequently flooded (Gray and Ferguson 1977: Sheets 27, 36). These soils are subject to large amounts of shrink and swell due to their large clay content.

Vegetation in the project area is primarily hardwood with dense understory. Trees include cottonwood, Nuttall oak, cherrybark oak, and sweet gum. Important understory vegetation includes switchcane, sedges, vines, and shrubs (Gray and Ferguson 1977: 38).

### Archeological Context

The cultural resources of northeastern Arkansas are both rich and diverse. Archeological research, primarily concerned with the region's late pre-Euro-American occupation, began in the 19th century. There exist a number of extensive overviews for these resources, including Denkin et al. (1978), Morse et al. (1982), and Morse and Morse (1983).

Human occupation has been documented for the region for over the last 10,000 years. Most researchers divide the periods of human use into five segments: Paleo-Indian, Archaic, Woodland, Mississippian, and Historic.

**Paleo-Indian.** Researchers estimate that human occupation of the area began more than 12,000 years ago at the end of the Pleistocene geologic period. Distinctive tools -- the fluted Clovis and Folsom points, known to have been used by such groups -- are documented for the region. This period, thought to have been characterized by a highly nomadic lifeway with an economic focus on now extinct Pleistocene megafauna, is thought to have lasted into the early Holocene geologic period.

**Dalton.** This period follows chronologically after the "fluted point" tradition and is considered by many researchers as the final expression of the Paleo-Indian lifeway but by others as the beginning of the more regionally restricted hunting and gathering cultures of the Archaic period. The distinctive tools of this culture, the Dalton point and its variants as well as the adze and burins, are found in large numbers throughout northeast Arkansas and southern Missouri. This period is thought to have lasted from approximately 8000 B.C. until about 7000 B.C. Investigations at the Brand Site, situated in the Western Lowlands section of Poinsett County, are important for the understanding of this group (Goodyear 1974). A lengthy discussion of the Dalton period is found in Morse and Morse (1983: 71-95).



Archaic. This is a very long period estimated to have lasted from about 7000 B.C. until about 500 B.C. It is marked by a hunting and gathering lifeway thought to have been organized within band societies. Morse and Morse (1983: 99-114) discuss the possibility of a marked population decrease in the Central Mississippi River Valley during the warmer and drier Hypsithermal period (7000 to 3000 B.C.) during this occupation. After about 3000 B.C., the regional population is thought to have increased substantially.

Woodland. This period, from about 500 B.C. to A.D. 900/1000, is thought to have seen the first manufacture of ceramics in the region. It is also associated with mound construction, and a number of researchers believe it marks the introduction of horticulture as part of the economy.

Mississippian. The beginning of this period of rapid cultural change is not known with certainty, but it was clearly in place by A.D. 1000. A convenient marker for this period is thought to be the widespread appearance of shell-tempered ceramics. Other traits include construction of earthen temple mounds, great variety in arrow points, and cultivation of corn, beans, and squash.

Historic. Prior to the beginning of the 19th century, Euro-American presence in the area was extremely limited. After the Louisiana Purchase in 1803, Euro-American settlement of the region proceeded at a rapid pace. Poinsett County was organized in 1838, but the county showed little agricultural development for the remainder of the century. In 1880 there were only 297 farms in the county with a total of 7,979 acres of improved lands (Goodspeed 1889: 579). Apparently, large amounts of the county were covered in flooded slackwater deposits which were densely forested. Timber harvesting and the lumber industry was a major economic activity.

The town of Marked Tree was a station on the Kansas City, Fort Scott, and Memphis Railroad. In 1889 it contained a depot, post office, and general store (Goodspeed 1889: 572). The store and a hotel were operated by A. S. Thorn and Company (Goodspeed 1889: 613).

The most recent published archeological investigations in the area are those performed by the Arkansas Archeological Survey for the Rivervale Outlet Ditch (Klinger and Mathis 1978). This work was sponsored by the U.S. Army Corps of Engineers, Memphis District. This site location effort documented three archeological sites in the near vicinity of the project area. These were 3PO394 -- an isolated biface found on a slight rise, 3PO400 -- fragments of historic ceramics and brick fragments scattered on a river bank, and 3PO401 -- brick fragments and ceramics scattered along a field road. None were considered significant and no further archeological investigations were recommended for them.

## SUMMARY OF INVESTIGATIONS

### Records Check

A records check was conducted by the Office of the State Archeologist, the Arkansas Archeological Survey, and the Arkansas Historic Preservation Program.

The Arkansas Historic Preservation Program reported one site of possible significance near the project area, the Marked Tree Siphon. Project construction activities will not impact this site.

The Office of the State Archeologist reported no previously recorded sites within the area of direct project impact. However, three previously recorded sites are within the near vicinity of the project area. These are 3PO394, 3PO400, and 3PO401 discussed above. None are considered significant nor will they be impacted by the project.

### Field Work

Field work had originally been scheduled for mid-April 1988 but flooding in the area prohibited effective examination at that time. The area was examined on May 6, 1986, by John Northrip and James Hoelscher.

The area was examined using pedestrian tactics with transects spaced at 20 to 25m intervals and shovel testing done at approximately 30m intervals along the transects. The profiles of two shovel tests were described in detail and matched the typical profile to be expected within a vertisol. Profile 1 contained the following horizons:

A11 -- 0 to 22cm; very dark grayish brown (10YR 3/2) clay; weak subangular blocky structure; very firm; common, intersecting slickensides; clear, smooth boundary.

A12 -- 22 to 36cm; dark brown (10YR 3/3) clay; weak subangular blocky structure; very firm; common, intersecting slickensides; clear, smooth boundary.

A13 -- 36 to 62cm; gray (10YR 6/1) clay with yellowish brown (10YR 5/4) mottles; weak subangular blocky structure; very firm; common intersecting slickensides; gradual smooth boundary.

A14 -- 72 to 86cm; gray (10YR 6/1) clay with yellowish-red (5YR 5/6) mottles; weak subangular blocky to massive structure; very firm; boundary not observed.

The extremely heavy clay soil prohibited the possibility of screening any matrix from these tests at the time of survey. Soil matrix from the subsurface tests were carefully sorted by shovel and trowel before the holes were refilled.

At the time of survey the area was heavily vegetated with a hardwood and cypress canopy and dense understory including poison ivy (Figures 3 and 4). Numerous areas of standing water were noted. Ground visibility within the area was generally less than 20 percent except in a small area at the northern end of the north-south corridor which was in cultivation. Here ground visibility was greater than 75 percent.

#### Results

No cultural resources were observed within the project area. Because the area was composed of a dense clay (vertisol), it is extremely unlikely that it would have been the location of human activities resulting in the accumulation of artifacts. In periods of wetness when the area was not actually covered with water, the matrix would turn to a sticky mud unsuitable for general habitation. During the periods of dryness the shrinking of the soil results in the development of desiccation cracks, often in excess of 2m deep. Any artifacts deposited on the surface would thus be displaced vertically to considerable distances within a few years.

#### Recommendations

No further investigations are recommended for this area.



Figure 3. View of project area. East-west arm near railroad bridge.



Figure 4. Project area. General view between levee and ditch.

#### REFERENCES CITED

Denkin, Albert, Cecil Brooks, Douglas Edsall, James Mueller, Robert Pasnat, Peter Skirbunt, Sally Tompkins, Charles Lee Decker, James O'Donnell, Vanessa Patrick, Genevieve Poirier, Phyllis Morse, Martin Pociask, and Bernard Poirier

1978 Predicting Cultural Resources in the St. Francis Basin, A Research Design. Report on file with the U.S. Army Corps of Engineers, Memphis. Memphis, Tennessee.

Goodspeed

1889 Biographical and Historical Memories of Northeast Arkansas. Goodspeed, Chicago.

Goodyear, Albert C.

1974 The Brand Site: A Techno-Functional Study of a Dalton Site in Northeast Arkansas. Arkansas Archeological Survey Research Series No. 7. Fayetteville, Arkansas.

Gray, James L., and Dick V. Ferguson

1977 Soil Survey of Poinsett County, Arkansas. United States Department of Agriculture, Soil Conservation Service. In cooperation with Arkansas Agricultural Experiment Station. Washington, D.C.

Klinger, Timothy C., and Mark Mathis

1978 St. Francis II. Arkansas Archeological Survey Research Report No. 14. Fayetteville.

Morse, Dan F., and Phyllis Morse

1983 Archaeology of the Central Mississippi Valley. Academic Press, New York.

Morse, Dan F., Neal Trubowitz, Phyllis Morse, Timothy Klinger and Ross Dinwiddie

1982 Northeast Arkansas. In A State Plan for the Conservation of Archeological Resources in Arkansas, edited by Hester Davis, pp. NE1-NE26. Arkansas Archeological Survey Research Report No. 21. Fayetteville.

Saucier, Roger T.

1970 Origin of the St. Francis Sunk Lands, Arkansas and Missouri. Geological Society of American Bulletin 81:2847-2854

1974 Quaternary Geology of the Lower Mississippi Valley. Arkansas Archeological Survey, Research Series No. 6, Fayetteville.

## SECTION C

### SCOPE OF WORK

Archaeological Intensive Survey, with testing, of The Ditch 61 Extension Near the Marked Tree Siphon, Polk County, Arkansas.

#### 1. General.

1.01. The Contractor shall conduct a background and literature search and intensive survey level investigation of The Ditch 61 Extension, Polk County, Arkansas. These tasks are in partial fulfillment of the Memphis District's obligations under the National Historic Preservation Act of 1966 (P.L. 89-665); the National Environment Policy Act of 1969 (P.L. 91-190); Executive Order 11593, "Protection and Enhancement of Cultural Environment," 13 May 1971 (36 CFR 3921); Preservation of Historic and Archaeological Data, 1974 (P.L. 93-291); and the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR, Part 300).

#### 1.02. Personnel Standards.

a. The Contractor shall utilize a systematic, interdisciplinary approach to conducting the study. Specialized knowledge and skills will be used during the course of the study to include expertise in archaeology, history, architecture, geology and other disciplines as required. Techniques and methodologies used for the study shall be representative of the state of current professional knowledge and development.

b. The following minimal experiential and academic standards shall apply to personnel involved in cultural resources investigations described in this Scope of Work:

1. Archaeological Project Directors or Principal Investigators (PI). Individuals in charge of an archaeological project or research investigation contract, in addition to meeting the appropriate standards for archaeologist, must have a publication record that demonstrates extensive experience in successful field project formulation, execution and technical monograph reporting. The Contracting Officer may also require suitable professional references to obtain estimates regarding the adequacy of prior work.

2. Archaeologist. The minimum formal qualifications for individuals practicing archaeology as a profession are a B.A. or B.S. degree from an accredited college or university, followed by a minimum of two years of successful graduate study with concentration in anthropology and specialization in archaeology and at least two summer field schools or their equivalent under the supervision of archaeologists or recognized competence. A Master's thesis or its equivalent in research and publication is highly recommended, as is the M.A. degree.

3. Other Professional Personnel. All non-archaeological personnel utilized for their special knowledge and expertise must have a B.A. or B.S. degree from an accredited college or university, followed by a minimum of one year of successful graduate study with concentration in appropriate study.

4. Other Supervisory Personnel. Persons in any archaeological supervisory position must hold a B.A., B.S. or M.A. degree with a concentration in archaeology and a minimum of 2 years of field and laboratory experience.

5. Crew Members and Lab Workers. All crew members and lab workers must have prior experience compatible with the tasks to be performed under this contract. An academic background in archaeology/anthropology is highly recommended.

c. All operations shall be conducted under the supervision of qualified professionals in the discipline appropriate to the data that is to be discovered, described or analyzed. Vitae of personnel involved in project activities may be required by the Contracting Officer at anytime during the period of service of this contract.

1.03. The Contractor shall designate in writing the name of the Principal Investigator. Participation time of the Principal Investigator shall average a minimum of 50 hours per month during the period of service of this contract. In the event of controversy or court challenge, the Principal Investigator shall be available to testify with respect to report findings. The additional services and expenses would be at Government expense, per paragraph 1.08 below.

1.04. The Contractor shall keep standard field records which will include, but are not limited to, field notebooks, state approved site forms, (prehistoric, historic, architectural), field data forms and graphics and photographs. Publishable quality site maps with precise boundaries and proposed impact boundaries will be submitted for each site.

1.05. To conduct the field investigation, the Contractor will obtain all necessary permits, licenses, and approvals from all local, state and Federal authorities. Should it become necessary in the performance of the work and services of the Contractor to secure the right of ingress and egress to perform any of the work required herein on properties not owned or controlled by the Government, the Contractor shall secure the consent of the owner, his representative, or agent, prior to effecting entry on such property.

1.06. Innovative approaches to data location, collection, description and analysis, consistent with other provisions of this purchase order and the Cultural Resources requirements of the Memphis District, are encouraged. Such approaches will require prior consultation with the Contracting Officer and/or his authorized representative.

1.07. No mechanical power equipment shall be utilized in any cultural resource activity without specific written permission of the Contracting Officer.

1.08. Techniques and methodologies used during the mitigation shall be representative of the current state of knowledge for their respective disciplines.

1.09. The Contractor shall furnish expert personnel to attend conferences and furnish testimony in any judicial proceedings involving the archaeological and historical study, evaluation, analysis and report. When required, arrangements for these services and payment therefor will be made by representatives of either the Corps of Engineers or the Department of Justice.

1.10. The Contractor shall supply such graphic aids (ex: profile and plan drawings) or tables as are necessary to provide a ready and clear understanding of spatial relationships or other data discussed in the text of the report. Such tables or figures shall appear as appropriate in the body of the report.

1.11. The Contractor, prior to the acceptance of the final report, shall not release any sketch, photograph, report or other material of any nature obtained or prepared under this contract without specific written approval of the Contracting Officer.

1.12. The extent and character of the work to be accomplished by the Contractor shall be subject to the general supervision, direction, control and approval of the Contracting Officer. The Contracting Officer may have a representative of the Government present during any or all phases of the described cultural resource project.

## 2. Study Area.

2.01. The Ditch 61 Extension project is located near the Marked Tree Siphons, Polk County Arkansas. See enclosure 1. The project extends east/west from station 6+00 to station 57+00 (part the B & N railroad tressel). On this stretch of work the survey right-of-way is 400 feet land warn from the left top bank and 200 feet landward from the right top bank. From station 6+00 to station 17+50 on the left bank the survey right-of-way extends to the top of the existing levee. The Northish/Southish portion of the project starts at the sharp bend in the levee (station 34+94 P.C.) and extends approximately 1 3/4 miles to where the B & N railroad crosses the levee. In this stretch the survey right-of-way extends from the levee toe (on the West side) approximately 50 feet to the edge of the existing borrow pits. See attached blue line (Enclosure 2). The entire project area is approximately 81 acres. The project is located on the Marked Tree, Arkansas 15 minutes quadrangle map.

## 3. Definitions.

3.01. "Cultural resources" are defined to include any buildings, site, district, structure, object, data, or other material relating to the history, architecture, archaeology, or culture of an area.

3.02. "Background and Literature Search" is defined as a comprehensive examination of existing literature and records for the purpose of inferring the potential presence and character of cultural resources in the study area. The examination may also serve as collateral information to field data in evaluating the eligibility of cultural resources for inclusion in the National Register of Historic Places or in ameliorating losses of significant data in such resources.

3.03. "Intensive Survey" is defined as a comprehensive, systematic, and detailed on-the-ground survey of an area, of sufficient intensity to determine the number, types, extent and distribution of cultural resources present and their relationship to project features.

3.04. "Mitigation" is defined as the amelioration of losses of significant prehistoric, historic, or architectural resources which will be accomplished through preplanned actions to avoid, preserve, protect, or minimize adverse effect upon such resources or to recover a representative sample of the data they contain by implementation of scientific research and other professional techniques and procedures. Mitigation of losses of cultural resources includes, but is not limited to, such measures as: (1) recovery and preservation of an adequate sample of archaeological data to allow for analysis and published interpretation of the cultural and environmental conditions prevailing at the time(s) the area was utilized by man; (2) recording, through architectural quality photographs and/or measured drawings of buildings, structures, districts, sites and objects and deposition of such documentation in the Library of Congress as a part of the National Architectural and Engineering Record; (3) relocation of buildings, structures and objects; (4) modification of plans or authorized projects to provide for preservation of resources in place; (5) reduction or elimination of impacts by engineering solutions to avoid mechanical effects of wave wash, scour, sedimentation and related processes and the effects of saturation.

3.05. "Reconnaissance" is defined as an on-the-ground examination of selected portions of the study area, and related analysis adequate to assess the general nature of resources in the overall study area and the probable impact on resources of alternate plans under consideration. Normally reconnaissance will involve the intensive examination of not more than 15 percent of the total proposed impact area.

3.06. "Significance" is attributable to those cultural resources of historical, architectural, or archaeological value when such properties are included in or have been determined by the Secretary of the Interior to be eligible for inclusion in the National Register of Historic Places after evaluation against the criteria contained in How to Complete National Register Forms.

3.07. "Testing" is defined as the systematic removal of the scientific, prehistoric, historic, and/or archaeological data that provide an archaeological or architectural property with its research data value. Testing may include controlled surface survey, shovel testing, profiling, and

limited subsurface test excavations of the properties to be affected for purposes of research planning, the development of specific plans for research activities, excavation, the development of specific plans for research activities, preparation of notes and records, and other forms of physical removal of data and the material analysis of such data and material. Preparation of reports on such data and material and dissemination of reports and other products of the research. Subsurface testing shall not proceed to the level of mitigation.

3.08. "Analysis" is the systematic examination of material data, environmental data, ethnographic data, written records, or other data which may be prerequisite to adequately evaluating those qualities of cultural loci which contribute to their significance.

#### 4. General Performance Specifications.

4.01. The Contractor shall prepare a management summary letter, draft and final report detailing the results of the study and their recommendations.

#### 4.02. Background and Literature Search.

a. This task shall include an examination of the historic and prehistoric environmental setting and cultural background of the study area and shall be of sufficient magnitude to achieve a detailed understanding of the overall cultural and environmental context of the study area. It is axiomatic that the background and literature search shall normally precede the initiation of all fieldwork.

b. Information and data for the literature search shall be obtained, as appropriate, from the following sources: (1) Scholarly reports - books, journals, theses, dissertations and unpublished papers; (2) Official Records Federal, state, county and local levels, property deeds, public works and other regulatory department records and maps; (3) Libraries and Museums both regional and local libraries, historical societies, universities, and museums; (4) other repositories - such as private collections, papers, photographs, etc.; (5) archeological site files at local universities, the State Historic Preservation Office, the State Archeologist; (6) Consultation with qualified professionals familiar with the cultural resources in the area, as well as consultation with professionals in associated areas such as history, sedimentology, geomorphology, agronomy, and ethnology.

c. The Contractor shall include as an appendix to the draft and final reports written evidence of all consultation and any subsequent response(s), including the dates of such consultation and communications.

d. The background and literature search shall be performed in such a manner as to facilitate predictive statements (to be included in the study report) concerning the probable quantity, character, and distribution of cultural resources within the project area. In addition, information obtained in the background and literature search should be of such scope and

detail as to serve as an adequate data base for subsequent field work and analysis in the study area undertaken for the purpose of discerning the character, distribution and significance of identified cultural resources.

e. In order to accomplish the objectives described in paragraph 4.02.d., it will be necessary to attempt to establish a relationship between landforms and the patterns of their utilization by successive groups of human inhabitants. This task should involve defining and describing various zones of the study area with specific reference to such variables as past topography, potential food resources, soils, geology, and river channel history.

#### 4.03. Intensive Survey.

a. Intensive Survey shall include the on-the-ground examination of the project areas described in paragraph 2.01 sufficiently to insure the location and preliminary evaluation of all cultural resources in the study area and to fulfill report requirements described for intensive survey in paragraph 5.03j.

b. Unless excellent ground visibility and other conditions conducive to the observation of cultural evidence occurs, shovel test pits, or comparable subsurface excavation units, shall be installed at intervals no greater than 30 meters throughout the study area. Shovel test pits shall be minimally 30 X 30 centimeters in size and extend to a minimum depth of 50 centimeters. All such units shall be screened using 1/4" mesh hardware cloth. Additional shovel test pits shall be excavated in areas judged by the Principal Investigator to display a high potential for the presence of cultural resources. If, during the course of intensive survey activities, areas are encountered in which disturbance of other factors clearly and decisively preclude the possible presence of significant cultural resources, the Contractor shall carefully examine and document the nature and extent of the factors and then proceed with survey activities in the remainder of the study area. Documentation and justification of such action shall appear in the survey report. The location of all shovel test units and surface observations shall be recorded and appear in the draft and final reports.

c. When cultural remains are encountered, horizontal site boundaries shall be derived by appropriate archaeological methods in such a manner as to allow precise location of site boundaries on Government project drawings and 7.5 minute U.S.G.S. quad maps when available. Methods used to establish site boundaries shall be discussed in the survey report together with the probable accuracy of the boundaries. The Contractor shall establish a datum at the discovered cultural loci which shall be precisely related to the site boundaries as well as to a permanent reference point (in terms of azimuth and distance). If possible, the permanent reference point used shall appear on Government baseline (project) drawings and/or 7.5 minute U.S.G.S. quad maps. If no permanent landmark is available, a permanent datum shall be established in a secure location for use as a reference point. The permanent datum shall



be precisely plotted and shown on U.S.G.S. quad maps and project drawings. All descriptions of site location shall refer to the location of the primary site datum.

d. The Contractor shall examine all cultural resources encountered in the intensive survey sufficiently well to determine the approximate size, general nature and quantity of architectural or site surface data. Data collection shall be of sufficient scope to provide information requested on state site forms.

e. During the course of the intensive survey, the Contractor should observe and record local environmental, physiographic, geological or other variables (including estimates of ground visibility and descriptions of soil characteristics) which may be variables useful in evaluating the effectiveness of procedures and providing comparative data for use in predictive statements which may be utilized in future Government cultural resource investigations.

f. When sites are not wholly contained within the right-of-way limits, the Contractor shall survey an area outside the right-of-way limits large enough to include the entire site within the survey area. This shall be done in an effort to delineate site boundaries and to determine the degree to which the site will be impacted.

#### g. Site Specific Investigations.

All cultural resources discovered within survey area shall be examined by methods consistent with the following requirements:

##### (1) Site Boundaries.

Horizontal site boundaries shall be derived by the use of surface observation procedures (where surface conditions are highly conducive to the observation of cultural evidence) or by screened shovel cut units or by a combination of these methods. The delineations of horizontal sites boundaries may be accomplished concurrently with the collection of other data consistent with paragraph 4.03g.(2). Site boundaries shall be related to a site datum and permanent reference point as described in paragraph 4.03c.

##### (2) Surface Data Retrieval.

Surface collection of the site area shall be accomplished in order to obtain data representative of total site surface content. Both historic and prehistoric items shall be collected. The Contractor shall carefully note and record descriptions of surface conditions of the site including ground cover and the suitability of soil surfaces for detecting cultural items (ex: recent rainfall, standing water or mud). If ground surfaces are not highly conducive to surface collection, screened shovel test units shall be used to augment surface collection procedures.

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Care should be taken to avoid bias in collecting certain classes of data or artifact types to the exclusion of others (ex: debitage or faunal remains) so as to insure that collections accurately reflect both the full range and the relative proportions of data classes present (ex: the proportion of debitage to implements or types of implements to each other). Such a collecting strategy shall require the total collection of quadrat or other sample units in sufficient quantities to reasonably assure that sample data are representative of such discrete site subareas as may exist. Since the number and placement of such sample units will depend, in part, on the subjective evaluation of intrasite variability, and the amount of ground cover, the Contractor shall describe, in the reconnaissance report, the rationale for the number and distribution of collection units. In the event that the Contractor utilizes systematic sampling procedures in obtaining representative surface samples, care should be taken to avoid periodicity in recovered data. No individual sample unit type used in surface data collection shall exceed 36 square meters in area.

The Contractor shall undertake (in addition and subsequent to sample surface collecting) a general site collection in order to increase the sample size of certain classes of data which the Principal Investigator may deem prerequisite to an adequate site-specific and intersite evaluation of data.

##### (3) Subsurface Data Retrieval.

Unless it can be conclusively and definitely demonstrated that no significant subsurface cultural resources occur at a site, the Contractor shall at each site, install a minimum of one 1 x 1 meter subsurface test unit to determine the presence and general nature of subsurface deposits.

h. Subsurface test units (other than shovel cut units) shall be excavated in levels no greater than 10 centimeters. Where cultural zone(s) or plow disturbance is present, however, excavated materials shall be removed by zones (and 10 cm. levels within zones where possible). Subsurface test units shall extend to a depth of at least 20 centimeters below artifact bearing soils. A portion of each test unit, measured from one corner (of a minimum 30 X 30 centimeters), shall be excavated to a depth of 40 centimeters below the last completely excavated level. All excavated material (including plow zone material) shall be screened using a minimum of 1/4" hardware cloth. Representative profile drawings shall be made of excavated unit.

i. Stringent horizontal spatial control of site specific investigations will be maintained by relating the location of all collection and test units to the primary site datum.

j. Other types of subsurface units may, at the Contractor's option, be utilized in addition to those units required by this Scope of Work.

k. Subsurface investigations will be limited to testing and shall not proceed to the level of mitigation.

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1. All test units excavated shall be backfilled by the Contractor.

4.04. Analysis and Curation. Unless otherwise indicated, artifactual and non-artifactual analysis shall be of an adequate level and nature to fulfill the requirements of this Scope of Work. All recovered cultural items shall be cataloged in a manner consistent with state requirements or standards of curation in the state in which the study occurs. The Contractor shall consult with appropriate state officials as soon as possible following the conclusion of fieldwork in order to obtain information (ex: accession numbers) prerequisite to such cataloging procedures. The Contractor shall have access to a depository for notes, photographs and artifacts (preferably in the state in which the study occurs) where they can be permanently available for study by qualified scholars. If such materials are not in Federal ownership, applicable state laws, if any, should be followed concerning the disposition of the materials after the completion of the final report. Efforts to insure the permanent curation of properly cataloged cultural resources materials in an appropriate institution shall be considered an integral part of the requirements of this Scope of Work. The Contractor shall pay all cost of the preparation and permanent curation of records and artifacts. An arrangement for curation shall be confirmed by the Contractor, subject to the approval of the Contracting Officer, prior to the acceptance of the final report.

5. General Report Requirements.

5.01. The primary purpose of the cultural resources report is to serve as a planning tool which aids the Government in meeting its obligations to preserve and protect our cultural heritage. The report will be in the form of a comprehensive, scholarly document that not only fulfills mandated legal requirements but also serves as a scientific reference for future cultural resources studies. As such, the report's content must be not only descriptive but also analytic in nature.

5.02. Upon completion of all field investigation and research, the Contractor shall prepare reports detailing the work accomplished, the results, the recommendations, for each project area. Copies of the draft and final reports of investigation shall be submitted in a form suitable for publication and be prepared in a format reflecting contemporaneous organizational and illustrative standards for current professional archaeological journals. The final report shall be typed on standard size 8-1/2" x 11" bond paper with pages numbered and with page margins one inch at top, bottom, and sides. Photographs, plans, maps, drawings and text shall be clean and clear. The final report shall be bound in a high quality professional type binding. The project title shall appear on the front cover.

5.03. The report shall include, but not necessarily be limited to, the following sections and items:

a. Title Page. The title page should provide the following information: the type of task undertaken, the study areas and cultural resources which were assessed; the location (county and state), the date of the report; the contract number; the name of the author(s) and/or the Principal Investigator; and the agency for which the report is being prepared. If a report has been authored by someone other than the Principal Investigator, the Principal Investigator must at least prepare a foreword describing the overall research context of the report, the significance of the work, and any other related background circumstances relating to the manner in which the work was undertaken.

b. Abstract. An abstract suitable for publication in an abstract journal shall be prepared and shall consist of a brief, quotable summary useful for informing the technically-oriented professional public of what the author considers to be the contributions of the investigation to knowledge.

c. Table of Contents.

d. Introduction. This section shall include the purpose of the report; a description of the proposed project; a map of the general area; a project map; and the dates during which the task was conducted. The introduction shall also contain the name of the institution where recovered materials will be curated.

e. Environmental Context. This section shall contain, but not be limited to, a discussion of probable past floral and faunal characteristics of the project area. Since data in this section may be used in the future evaluation of specific cultural resource significance, it is imperative that the quantity and quality of environmental data be sufficient to allow subsequent detailed analysis of the relationship between past cultural activities and environmental variables.

f. Previous Research. This section shall describe previous research which may be useful in deriving or interpreting relevant background research data, problem domains, or research questions and in providing a context in which to examine the probability of occurrence and significance of cultural resources in the study area.

g. Literature Search and Personal Interviews. This section shall discuss the results of the literature search, including specific data sources, and personal interviews which were conducted during the course of investigations.

h. Survey, Testing and Analytical Methods. This section shall contain an explicit discussion of research and/or survey strategy, and should demonstrate how environmental data, previous research data, the literature search and personal interviews have been utilized in constructing such a strategy.

i. Survey, Testing and Analytical Results. This section shall discuss archeological, architectural, and historical resources surveyed, tested and analyzed; the nature and results of analysis, and the scientific importance or significance of the work. Quantified listings and descriptions of artifacts and their proveniences may be included in this section or added to the report as an appendix. Inventoried sites shall include a site number.

j. Conclusions and Recommendations. This section shall contain the recommendations of the Principal Investigator regarding all contract activities. Recommendations should be at a level sufficient to accomplish the objectives described in paragraph 4.03. Conclusions derived from survey activities concerning the nature, quantity and distribution of cultural loci, should be used in describing the probable impact of project work on cultural resources.

k. References (American Antiquity Style).

l. Appendices (Maps, correspondence, etc.). A copy of this Scope of Work shall be included as an appendix in all reports.

5.04. The above items do not necessarily have to be discrete sections; however, they should be readily discernible to the reader. The detail of the above items may vary somewhat with the purpose and nature of the study.

5.05. In order to prevent potential damage to cultural resources, no information shall appear in the body of the report which would reveal precise resource location. All maps which indicate or imply precise site locations shall be included in reports as a readily removable appendix (ex: envelope).

5.06. No logo or other such organizational designation shall appear in any part of the report (including tables or figures) other than the title page.

5.07. Unless specifically authorized by the Contracting Officer, all reports shall utilize permanent site numbers assigned by the state in which the study

5.08. All appropriate information (including typologies and other classificatory units) not generated in these contract activities shall be suitably referenced.

5.09. Reports detailing testing activities shall contain site specific maps. Site maps shall indicate site datum(s), location of data collection units (including shovel cuts, subsurface test units and surface collection units); site boundaries in relation to proposed project activities, site grid systems (where appropriate) and such other items as the Contractor may deem appropriate to the purposes of this contract.

5.10. Information shall be presented in textual, tabular, and graphic forms, whichever are most appropriate, effective and advantageous to communicate necessary information. All tables, figures and maps appearing in the report shall be of publishable quality.

5.11. Any abbreviated phrases used in the text shall be spelled out when the phrase first occurs in the text. For example use "State Historic Preservation Officer" (SHPO) in the initial reference and thereafter "SHPO" may be used.

5.12. The first time the common name of a biological species is used it should be followed by the scientific name.

5.13. In addition to street addresses or property names, sites shall be located on the Universal Transverse Mercator (UTM) grid.

5.14. All measurements should be metric. If the Contractor's equipment is in the English system, then the metric equivalents should follow in parentheses.

5.15. As appropriate, diagnostic and/or unique artifacts, cultural resources or their contexts shall be shown by drawings or photographs.

5.16. Black and white photographs are preferred except when color changes are important for understanding the data being presented. No instant type photographs may be used.

5.17. Negatives of all black and white photographs and/or color slides of all plates included in the final report shall be submitted so that copies for distribution can be made.

6. Submittals.

6.01. The Contractor shall, unless delayed due to causes beyond his fault or negligence, complete all work and services under the purchase order within the following time limitations after receipt of notice to proceed.

a. A management summary letter, of work conducted, and the findings of that work shall be submitted within 20 calendar days following receipt of notice to proceed.

b. Four (4) copies of the draft report will be submitted within 40 calendar days following receipt of notice to proceed.

c. The Government shall review the draft report and provide comments to the Contractor within 20 calendar days after receipt of the draft report.

d. An original and 20 bound copies of the final report shall be submitted within 20 calendar days following the Contractor's receipt of the Government's comments on the draft report.

6.02. If the Government review exceeds 20 calendar days, the period of service of the purchase order shall be extended on a day-by-day basis equal to any additional time required by the Government for review.

6.03. The Contractor shall submit under separate cover 4 copies of appropriate 15' quadrangle maps (7.5' when available) and other site drawings which show exact boundaries of all cultural resources within the project area and their relationship to project features, and single copies of all forms, records and photographs described in paragraph 1.04.

6.04. The Contractor shall submit to the Contracting Officer completed National Register forms including photographs, maps, and drawings in accordance with the National Register Program if any sites inventoried during the survey are found to meet the criteria of eligibility for nomination and for determination of significance. The completed National Register forms are to be submitted with the final report.

6.05. At any time during the period of service of this contract, upon the written request of the Contracting Officer, the Contractor shall submit, within 30 calendar days, any portion or all field records described in paragraph 1.04 without additional cost to the Government.

6.06. When cultural resources are located during intensive survey activities, the Contractor shall supply the appropriate State Historic Preservation Office with completed site forms, survey report summary sheets, maps or other forms as appropriate. Blank forms may be obtained from the State Historic Preservation Office. Copies of such completed forms and maps shall be submitted to the Contracting Officer within 30 calendar days of the end of fieldwork.

6.07. The Contractor shall prepare and submit with the final report, a site card for each identified resource or aggregate resource. These site cards do not replace state approved prehistoric, historic, or architectural forms or Contractor designed forms. This site card shall contain the following information, to the degrees permitted by the type of study authorized:

a. site number

b. site name

c. location: section, township, and UTM coordinates (for procedures in determining UTM coordinates refer to How to Complete National Register Forms, National Register Program, Volume 2.

d. county and state

e. quad maps

f. date of record

g. description of site

h. condition of site

i. test excavation results

j. typical artifacts

k. chronological position (if known)

l. relation to project

m. previous studies and present contract number

n. additional remarks

#### 7. Schedule.

7.01. The Contractor shall, unless delayed due to causes beyond his control and without his fault or negligence, complete all work and services under this contract within the following time limitations.

<u>Activity</u>	<u>Due Date (beginning with acknowledged date of receipt of notice to proceed)</u>
Intensive Survey of the Ditch 61 Extension	5 calendar days
Submittal of Management Summary Letter	20 calendar days
Submittal of Draft Report	40 calendar days
Government Review of Draft Report	60 calendar days
Contractor's Submittal of Final Report	80 calendar days

7.02. The Contractor shall make any required corrections after review by the Contracting Officer of the reports. In the event that any of the Government review periods are exceeded and upon request of the Contractor, the contract period will be extended on a calendar day for day basis. Such extension shall be granted at no additional cost to the Government.

8. Method of Payment.

8.01. Upon satisfactory completion of work by the Contractor, in accordance with the provisions of this purchase order, and its acceptance by the Contracting Officer, the Contractor will be paid the amount of money indicated in Block 23 of the purchase order.

8.02. If the Contractor's work is found to be unsatisfactory and if it is determined that fault or negligence on the part of the Contractor or his employees has caused the unsatisfactory condition, the Contractor will be liable for all costs in connection with correcting the unsatisfactory work. The work may be performed by Government forces or Contractor forces at the direction of the Contracting Officer. In any event, the Contractor will be held responsible for all costs required for correction of the unsatisfactory work, including payments for services, automotive expenses, equipment rental, supervision, and any other costs in connection therewith, where such unsatisfactory work as deemed by the Contracting Officer to be the result of carelessness, incompetent performance or negligence by the Contractor's employees. The Contractor will not be held liable for any work or type of work not covered by this purchase order.

8.03. Prior to settlement upon termination of the purchase order, and as a condition precedent thereto, the Contractor shall execute and deliver to the Contracting Officer a release of all claims against the Government arising under or by virtue of the purchase order, other than such claims, if any, as may be specifically excepted by the Contractor from the operation of the release in stated amounts to be set forth therein.